National Training Center and Fort Irwin

SAFETY TIP OF THE WEEK

Vehicle Restraint Systems

- A vehicle restraint system or seatbelt, is a safety device designed to secure the occupant of a vehicle against harmful movement that may result in serious injury or death during a collision or a sudden stop. A seat belt functions by keeping occupants positioned correctly for maximum effectiveness of the airbag (if equipped) and by preventing occupants being ejected from the vehicle in a crash or if the vehicle rolls over.

- Seat belts are the single most effective safety device in preventing serious injuries and reducing fatalities in motor vehicle crashes. Seatbelts are estimated to have saved over 11,950 lives in 2014 alone. Research has shown that lap/shoulder belts, when used properly, reduce the risk of fatal injury to front-seat passenger car occupants by 45 percent and the risk of moderate-to-critical injury by 50 percent.

- Army requires the wearing of seat belts by all Soldiers driving or riding in a motor vehicle whether on or off the installation and by all persons in or on an Army-owned motor vehicle.

- On 2 June 2015 a fatality accident at Fort Irwin occurred when a High Mobility Multipurpose Wheeled Vehicle (HMMWV) struck a 2½ foot berm. As the HMMWV began to roll, the impact ejected the unrestrained driver. The vehicle rolled 180 degrees impacting the windshield frame and the left A pillar. It then rolled another 90 degrees coming to rest on its right side. After the ejection from the vehicle, the driver came to rest some 60 feet from the point of ejection. The driver died as a result of blunt force trauma.

7 November 2011 Stryker vehicle rollover fatality. Vehicle commander utilized an unauthorized improvised gunner restraint (vehicle tow strap).

Rollovers: During a collision, impact from a loose objects will have a relative force equal to the object's weight multiplied by the speed in which it travels. An unsecured bottle holding two quarts of water becomes an 83lb projectile in a vehicle traveling only twenty miles per hour. Whenever possible, place heavy items on floorboards or in the cargo area of a vehicle. Loose objects must be securely tied down or separated from the passenger area by a well-anchored partition. When transporting personnel in cargo truck convoys, the last vehicle in the convoy will not be used to carry passengers

Crew evacuation drills: Crew evacuation drills are often overlooked during training. The probability of an injury can be significantly reduced if crews practice proper evacuation and rollover procedures. Vehicle technical manuals provide emergency procedures, which should be incorporated into driver and crew training programs.

Gunner Restraint Systems

- The Gunner Restraint System (GRS) is designed to prevent gunner from being ejected in a crash or rollover. The GRS is a personal safety restraint device, as are seat belt restraint systems, safety straps, and any other safety device that is used to secure or provide a safety mechanism to a Soldier operating or riding in a vehicle. All vehicle systems with turrets must have an approved safety restraint device mounted in the vehicle belts. It also provides stabilization during high speed maneuvers and operations on rough terrain.

- The GRS consists of a five-point harness attached to a locking mechanism located inside the vehicle. The restraint system easily locks into place while allowing the gunner freedom of movement and the necessary protection to keep him in the turret.

- The vehicle commander is responsible for the safety of the Soldiers assigned to the vehicle and will ensure that all occupants of the vehicle use the appropriate safety restraints.

- Mixing or modifying personal safety restraint system kit, or components poses a serious safety risk. Each kit is designed and approved for a specific vehicle weapons system. Commercially available personal safety restraint devices are not authorized for use in Army vehicles and must be removed if installed. The only approved devices are those certified and approved by Tactical Army Command (TACOM) for use by each specific model vehicle.

- In the event of a rollover or vehicular accident. the gunner restraint system is only designed to prevent the gunner from being ejected from the vehicle. It is not designed to pull the gunner back into the vehicle. All vehicle crew members must be trained and rehearsed in rollover drills. The gunner restraint system , provides maximum protection when used with prescribed rollover procedures. Soldiers must not rely solely on the gunner restraint system to prevent injury.